

## CLAIMS

9. An exposure and modulation device for modulating an exposure intensity in an integrated digital screen-imaging system, comprising a light source; a light modulator that includes a plurality of rows of light-modulating cells; a device for imaging on said light modulator; a device for imaging said light modulator on a photo sensitive material; a device for producing a relative motion between said light modulator and said photo sensitive material, so that a direction of motion is substantially perpendicular to a direction of said rows of said light-modulating cells; a device for scrolling a data pattern through various columns of said light modulator at a speed so that the imaging of any data pattern is kept substantially stationary relative to said photosensitive material during said motion; and at least one device for stopping the scrolling procedure after a certain adjustable number of cells of said light modulator used for exposure of said photosensitive material.

10. An exposure and modulation device as defined in claim 9, wherein said light modulator includes a digital mirror device.

11. An exposure and modulation device as defined in claim 9, wherein said light modulator has 1024\*758 cells.

12. An exposure and modulation device as defined in claim 9,  
wherein said light modulator includes a liquid-crystal array.

13. An exposure and modulation device as defined in claim 9,  
wherein said light modulator includes magneto-optical cells.

14. An exposure and modulation device as defined in claim 9,  
wherein said light modulator includes ferroelectric cells.

15. A method for exposure and modulation of exposure  
intensity in an integrated digital screen imaging system in which light from  
a light source is imaged on a light modulator that includes a plurality of rows  
of light-modulating cells, the method comprising the steps of modulating the  
light from the light source by the light modulator; thereafter imaging the light  
modulator on a photosensitive material moving in a motion relative to the  
light modulator; selecting a direction of motion substantially perpendicular to  
a direction of the rows of the light-modulating cells; scrolling data to be  
imaged on the photosensitive material through columns of the light modulator  
at a speed so that the imaging of any data pattern is kept substantially  
stationary relative to the photosensitive material during the motion; and  
stopping the scrolling after a certain adjustable number of cells of the light

modulator used to expose the photosensitive material, depending on the exposure time specified for a respective pixel on the material to be exposed.

as  
cont.

16. A method as defined in claim 15; and further comprising moving the data to be imaged to any column so that they can be transferred from there to subsequent columns.

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